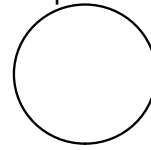


11-5 Areas Circles and Sectors

11.5 Circles → Sectors
Area of a circle = πr^2

Example 1:

$r = 4 \text{ cm}$



$$A = 16\pi \text{ cm}^2$$

$$\approx 50.3 \text{ cm}^2$$

Example 2:

The area of a circle = 390.1 cm^2 .
What is the radius?

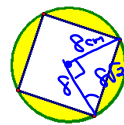
$$390.1 = \pi r^2$$

$$\sqrt{124.2} = \sqrt{r^2}$$

$$11.1 \text{ cm} = r$$

Example 3:

A square is inscribed in a circle.
Find the area of the shaded region.
The radius is 8 cm.



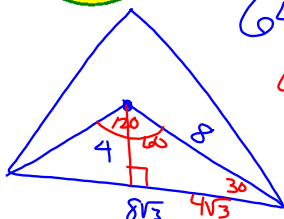
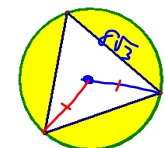
$$A_{\text{circle}} - A_{\text{square}}$$

$$64\pi - (8\sqrt{2})^2$$

$$64\pi - 128$$

$$73.1 \text{ cm}^2$$

Example 4: Find the area of the shaded region.
One side of the equilateral triangle is $8\sqrt{3} \text{ cm}$.



$$A_{\text{circle}} - A_{\Delta}$$

$$64\pi - \frac{(8\sqrt{3})^2 \sqrt{3}}{4}$$

$$64\pi - 48\sqrt{3}$$

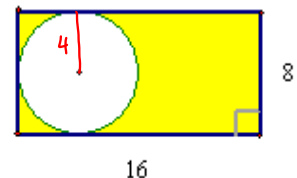
$$117.9 \text{ cm}^2$$

Example 5:
Find the area of the shaded region.

$$A_{\text{rect}} - A_{\text{circle}}$$

$$8 \cdot 16 - 16\pi$$

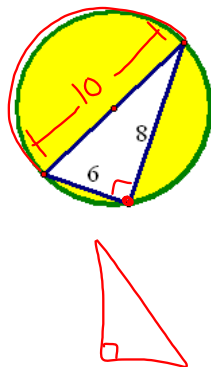
$$77.7 \text{ u}^2$$



Example 6:

Find the area of the shaded region.

Circle - \triangle
 $25\pi - \frac{1}{2}6 \cdot 8$
 54.5 m^2



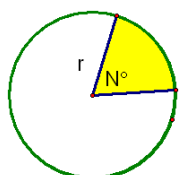
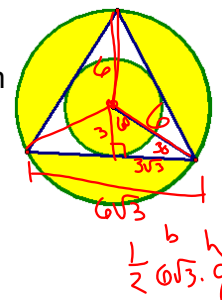
Example 7:

Find the area of the shaded region.

Eq. \triangle

$$r = 6 \text{ cm}$$

$A_{B.C.} - A_{\triangle} + A_{L.C.}$
 $36\pi - 27\sqrt{3} + 9\pi$
 94.6 cm^2



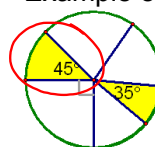
Area of Sector

$$A = \frac{N}{360} \pi r^2$$

$$\frac{\text{area sector}}{\pi r^2} = \frac{m \widehat{\text{arc}}}{360}$$

Example 8:

Find the area of each sector.



$$d = 18 \text{ in}$$

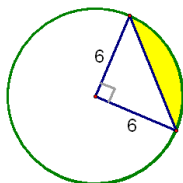
$$r = 9$$

$A = \frac{45}{360} \pi \cdot 81$
 $\approx 31.8 \text{ in}^2$

Example 9:

Find the area of the segment.

Sector - \triangle
 $\frac{90}{360} 36\pi - \frac{1}{2}6 \cdot 6$
 $\approx 10.3 \text{ m}^2$



HW p758-759

#s 3, 4, 7, 11, 12, 17, 26, 28-31